GLOSSARY OF TERMS

ACD

Short for ***A****utomatic* ***C****all* ***D****istributor*, a telephone facility that handles incoming calls and manages them based on a database of handling instructions.

ANSI

Acronym for the ***A****merican* ***N****ational* ***S****tandards* ***I****nstitute.* Founded in 1918, ANSI is a voluntary organization composed of over 1,300 members (including all the large computer companies) that creates standards for the computer industry. For example, ANSI C is a version of the C language that has been approved by the ANSI committee. To a large degree, all ANSI C compilers, regardless of which company produces them, should behave similarly.

API

Abbreviation of ***a****pplication* ***p****rogram* ***i****nterface*, a set of routines, protocols, and tools for building software applications. A good API makes it easier to develop a program by providing all the building blocks. A programmer puts the blocks together.

Most operating environments, such as MS-Windows, provide an API so that programmers can write applications consistent with the operating environment. Although APIs are designed for programmers, they are ultimately good for users because they guarantee that all programs using a common API will have similar interfaces. This makes it easier for users to learn new programs.

ATM

Short for ***A****synchronous* ***T****ransfer* ***M****ode*, a network technology based on transferring data in cells or packets of a fixed size. The cell used with ATM is relatively small compared to units used with older technologies. The small, constant cell size allows ATM equipment to transmit video, audio, and computer data over the same network, and assure that no single type of data hogs the line.

Some people think that ATM holds the answer to the Internet bandwidth problem, but others are skeptical. ATM creates a fixed channel, or route, between two points whenever data transfer begins. This differs from TCP/IP, in which messages are divided into packets and each packet can take a different route from source to destination. This difference makes it easier to track and bill data usage across an ATM network, but it makes it less adaptable to sudden surges in network traffic.

Bandwidth

The amount of data that can be transmitted in a fixed amount of time. For digital devices, the bandwidth is usually expressed in bits per second(bps) or bytes per second. For analog devices, the bandwidth is expressed in cycles per second, or Hertz (Hz).

Browser

Short for *Web browser*, a software application used to locate and display Web pages. The two most popular browsers are Netscape Navigator and Microsoft Internet Explorer. Both of these are *graphical browsers*, which means that they can display graphics as well as text. In addition, most modern browsers can present multimedia information, including sound and video, though they require plug-ins for some formats.

Call Center

A place where calls are answered and made. A call center will typically have lots of people (also called agents), an automatic call distributor, a computer for order-entry and lookup on customer's orders. A call center could also have a predictive dialer for making lots of calls quickly. The term "call center" is broadening. It now includes help desks and service lines.

Cetegory (CAT) 5-e

Cabling that is one of six grades of UTP cabling that can transmit data at speeds of up to 1000 Mbpts.

Centrex

Short for ***centr****al office* ***ex****change service*, a type of PBX service in which switching occurs at a local telephone station instead of at the company premises. Typically, the telephone company owns and manages all the communications equipment necessary to implement the PBX and then sells various services to the company.

Coaxial cable

A type of wire that consists of a center wire surrounded by insulation and then a grounded shield of braided wire. The shield minimizes electrical and radio frequency interference.

Coaxial cabling is the primary type of cabling used by the cable television industry and is also widely used for computer networks. Although more expensive than standard telephone wire, it is much less susceptible to interference and can carry much more data. Because the cable television industry has already connected millions of homes with coaxial cable, many analysts believe that they are the best positioned to capitalize on the much-heralded information highway.

Computer Telephone Integration

A term for connecting a computer to a telephone switch and having the computer issue the telephone switch commands to move calls around.

DHCP

Short for Dynamic Host Configuration Protocol, a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. DHCP also supports a mix of static and dynamic IP addresses.

Dynamic addressing simplifies network administration because the software keeps track of IP addresses rather than requiring an administrator to manage the task. This means that a new computer can be added to a network without the hassle of manually assigning it a unique IP address. Many ISPs use dynamic IP addressing for dial-up users.

DHCP client support is built into Windows 95 and NT workstation. NT 4 server includes both client and server support.

Domain

A group of computers and devices on a network that are administered as a unit with common rules and procedures. Within the Internet, domains are defined by the *IP address.* All devices sharing a common part of the IP address are said to be in the same domain.

Encryption

The translation of data into a secret code. Encryption is the most effective way to achieve data security. To read an encrypted file, you must have access to a secret key or password that enables you to *decrypt* it. Unencrypted data are called *plain text;* encrypted data are referred to as *cipher text*.

FDDI

Abbreviation of ***F****iber* ***D****istributed* ***D****ata* ***I****nterface*, a set of ANSI protocols for sending digital data over fiber optic cable. FDDI networks are token-passing networks, and support data rates of up to 100 Mbps (100 million bits) per second. FDDI networks are typically used as backbones for wide-area networks.

An extension to FDDI, called *FDDI-2*, supports the transmission of voice and video information as well as data. Another variation of FDDI, called *FDDI Full Duplex Technology (FFDT)* uses the same network infrastructure but can potentially support data rates up to 200 Mbps.

Firewall

A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially *intranets.* All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

Frame Relay

A packet-switching protocol for connecting devices on a Wide Area Network (WAN). Frame Relay networks in the U. S. support data transfer rates at T-1 (1. 544 Mbps) and T-3 (45 Mbps) speeds. In fact, you can think of Frame Relay as a way of utilizing existing T-1 and T-3 lines owned by a service provider. Most telephone companies now provide Frame Relay service for customers who want connections at 56 Kbps to T-1 speeds. (In Europe, Frame Relay speeds vary from 64 Kbps to 2 Mbps.

In the U. S., Frame Relay is quite popular because it is relatively inexpensive. However, it is being replaced in some areas by faster technologies, such as ATM.

Gateway

A node on a network that serves as an entrance to another network. For example, when a user connects to the Internet, that person essentially connects to a server that issues the Web pages to the user. These two devices are host nodes, not gateways. In enterprises, the gateway is the computer that routes the traffic from a workstation to the outside network that is serving the Web pages. In homes, the gateway is the ISP that connects the user to the Internet.

In enterprises, the gateway node often acts as a proxy server and a firewall. The gateway is also associated with both a router, which use headers and forwarding tables to determine where packets are sent, and a switch, which provides the actual path for the packet in and out of the gateway.

ICMP

Short for ***I****nternet* ***C****ontrol* ***M****essage* ***P****rotocol*, an extension to the Internet Protocol (IP) defined by RFC 792. ICMP supports packets containing error, control, and informational messages. The PING command, for example, uses ICMP to test an Internet connection.

Interface

A boundary across which two independent systems meet and act on or communicate with each other. In computer technology, there are several types of interfaces.

- User interface - the keyboard, mouse, menus of a computer system. The user interface allows the user to communicate with the operating system.
- Software interface - the languages and codes that the applications use to communicate with each other and with the hardware.
- Hardware interface - the wires, plugs and sockets that hardware devices use to communicate with each other.

ISP

Short for ***I**nternet **S**ervice **P**rovider*, a company that provides access to the Internet. For a monthly fee, the service provider gives you a software package, username, password and access phone number. Equipped with a modem, you can then log on to the Internet and browse the World Wide Web and USENET, and send and receive e-mail.
In addition to serving individuals, ISPs also serve large companies, providing a direct connection from the company's networks to the Internet. ISPs themselves are connected to one another through *Network Access Points (NAPs)*.

IVR

Short for ***i**nteractive **v**oice **r**esponse*, a telephony technology in which someone uses a touch-tone telephone to interact with a database to acquire information from or enter data into the database. IVR technology does not require human interaction over the telephone as the user's interaction with the database is predetermined by what the IVR system will allow the user access to. For example, banks and credit card companies use IVR systems so that their customers can receive up-to-date account information instantly and easily without having to speak directly to a person. IVR technology is also used to gather information, as in the case of telephone surveys in which the user is prompted to answer questions by pushing the numbers on a touch-tone telephone.

IP

Abbreviation of ***I**nternet **P**rotocol*, pronounced as two separate letters. IP specifies the format of packets, also called *datagrams*, and the addressing scheme. Most networks combine IP with a higher-level protocol called *Transmission Control Protocol (TCP)*, which establishes a virtual connection between a destination and a source.

IP by itself is something like the postal system. It allows you to address a package and drop it in the system, but there's no direct link between you and the recipient. TCP/IP, on the other hand, establishes a connection between two hosts so that they can send messages back and forth for a period of time.

The current version of IP is *IPv4*. A new version, called *IPv6* or IPng, is under development.

LAN

Abbreviation of *Local Area Network*. A computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a *wide-area network (WAN).*

Most LANs connect workstations and personal computers. Each *node* (individual computer) in a LAN has its own CPU with which it executes programs, but it also is able to access data and devices anywhere on the LAN. This means that many users can share expensive devices, such as laser printers, as well as data. Users can also use the LAN to communicate with each other, by sending e-mail or engaging in chat sessions.

There are many different types of LANs *Ethernets* being the most common for PCs. Most Apple Macintosh networks are based on Apple's AppleTalk network system, which is built into Macintosh computers.

MAGNET

State of Arizona shared campus network for communications traffic.

MAN

Short for ***M****etropolitan* ***A****rea* ***N****etwork,* a data network designed for a town or city. In terms of geographic breadth, MANs are larger than local-area networks (LANs), but smaller than wide-area networks (WANs). MANs are usually characterized by very high-speed connections using fiber optical cable or other digital media.

Mbps

Short for ***m****ega****b****its* ***p****er* ***s****econd,* a measure of data transfer speed. Networks, for example, are generally measured in Mbps.

Megabit

When used to describe data transfer rates, it refers to one million bits. Networks are often measured in megabits per second, abbreviated as *Mbps*.

Multiplex

To combine multiple signals (analog or digital) for transmission over a single line or media. A common type of multiplexing combines several low-speed signals for transmission over a single high-speed connection. The following are examples of different multiplexing methods:

- Frequency Division Multiplexing (FDM): each signal is assigned a different frequency
- Time Division Multiplexing (TDM): each signal is assigned a fixed time slot in a fixed rotation
- Statistical Time Division Multiplexing (STDM): time slots are assigned to signals dynamically to make better use of bandwidth
- Wavelength Division Multiplexing (WDM)**:** each signal is assigned a particular wavelength; used on optical fiber.

Node

In networks, a processing location. A node can be a computer or other device, such as a printer. Every node has a unique network address, sometimes called a *Data Link Control (DLC) address* or *Media Access Control (MAC) address*.

Packet

A piece of a message transmitted over a packet-switching network. See under *packet switching*. One of the key features of a packet is that it contains the destination address in addition to the data. In IP networks, packets are often called *datagrams.*

PBX

Short for ***p****rivate* ***b****ranch* ***ex****change,* a private telephone network used within an enterprise. Users of the PBX share a certain number of *outside lines* for making telephone calls external to the PBX.

Most medium-sized and larger companies use a PBX because it's much less expensive than connecting an external telephone line to every telephone in the organization. In addition, it's easier to call someone within a PBX because the number you need to dial is typically just 3 or 4 digits.

A new variation on the PBX theme is the centrex, which is a PBX with all switching occurring at a local telephone office instead of at the company's premises.

PCM

Short for *Pulse Code Modulation,* a sampling technique for digitizing analog signals, especially audio signals. PCM samples the signal 8,000 times a second; each sample is represented by 8 bits for a total of 64 Kbps.

PCM is used with T-1 and T-3 carrier systems. These carrier systems combine the PCM signals from many lines and transmit them over a single cable or other medium.

PDA

Short for ***p****ersonal* ***d****igital* ***a****ssistant,* a handheld device that combines computing, telephone/fax, Internet and networking features. A typical PDA can function as a cellular phone, fax sender, Web browser and personal organizer. Unlike portable computers, most PDAs began as pen-based, using a stylus rather than a keyboard for input. This means that they also incorporated handwriting recognition features. Some PDAs can also react to voice input by using voice recognition technologies. PDAs of today are available in either a stylus or keyboard version.
The field of PDA was pioneered by Apple Computer, which introduced the Newton MessagePad in 1993. Shortly thereafter, several other manufacturers offered similar products. Today, one of the most popular brands of PDAs is the series of Palm Pilots from Palm, Inc.
PDAs are also called palmtops, hand-held computers and pocket computers.

Predictive Dialing System

An automated method of making many outbound calls without people and then passing answered calls to a person as the calls are answered.

PSTN

Short for ***P****ublic* ***S****witched* ***T****elephone* ***N****etwork,* which refers to the international telephone system based on copper wires carrying analog voice data. This is in contrast to newer telephone networks base on digital technologies, such as FDDI.

Telephone service carried by the PSTN is often called *plain old telephone service (POTS).*

Router

A device that connects any number of LANs.

Routers use headers and a forwarding table to determine where packets go, and they use ICMP to communicate with each other and configure the best route between any two hosts.
Very little filtering of data is done through routers. Routers do not care about the type of data they handle.

Server

A computer or device on a network that manages network resources. For example, a *file server* is a computer and storage device dedicated to storing files. Any user on the network can store files on the server. A *print server* is a computer that manages one or more printers, and a *network server* is a computer that manages network traffic. A database *server* is a computer system that processes database queries.

SIP

Short for ***S****ession* ***I****nitiated* ***P****rotocol*, or ***S****ession* ***I****nitiation* ***P****rotocol*, a signaling protocol for Internet conferencing, telephony, presence, events notification and instant messaging. The protocol initiates call setup, routing, authentication and other feature messages to endpoints within an IP domain.

Stylus

A pointing and drawing device shaped like a pen. You use a stylus with a digitizing tablet or touch screen.

Switch

In networks, a device that filters and forwards packets between LAN segments. Switches operate at the data link layer (layer 2) and sometimes the network layer (layer 3) of the OSI Reference Model and therefore support any packet protocol. LANs that use switches to join segments are called *switched LANs* or, in the case of Ethernet networks, *switched Ethernet LANs*.

T-1 carrier

A dedicated phone connection supporting data rates of 1. 544Mbits per second. A T-1 line actually consists of 24 individual channels, each of which supports 64Kbits per second. Each 64Kbit/second channel can be configured to carry voice or data traffic. Most telephone companies allow you to buy just some of these individual channels, known as *fractional T-1* access.

T-1 lines are a popular leased line option for businesses connecting to the Internet and for Internet Service Providers (ISPs) connecting to the Internet backbone. The Internet backbone itself consists of faster T-3 connections.

T-3 carrier

A dedicated phone connection supporting data rates of about 43 Mbps. A T-3 line actually consists of 672 individual channels, each of which supports 64 Kbps.
T-3 lines are used mainly by Internet Service Providers (ISPs) connecting to the Internet backbone and for the backbone itself.

TDM

Short for *Time Division Multiplexing*, a type of multiplexing that combines data streams by assigning each stream a different time slot in a set. TDM repeatedly transmits a fixed sequence of time slots over a single transmission channel. Within T-Carrier systems, such as T-1 and T-3, TDM combines Pulse Code Modulated (PCM) streams created for each conversation or data stream.

Tele-Computing

The ability of employees to work at locations (e. g., home) other than their employer's office, and have full access to all computer applications required to perform their work.

UTP

Short for ***U****nshielded* ***T****wisted* ***P****air*, a popular type of cable that consists of two unshielded wires twisted around each other. Due to its low cost, UTP cabling is used extensively for local-area networks (LANs) and telephone connections. UTP cabling does not offer as high bandwidth or as good protection from interference as coaxial or fiber optic cables, but it is less expensive and easier to work with.

VPN

Short for ***v****irtual* ***p****rivate* ***n****etwork*, a *network* that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable you to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.

WAN

An abbreviation for *wide-area network*. A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs). Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet